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B+ → 2. (Amended) A packet processor as recited in claim 1, wherein said data input bus of the control unit is coupled to a processor bus and each of said encryption and authentication processing units comprises a data input bus coupled to the processor bus.

3. (Amended) A packet processor as recited in claim 1, wherein said data input bus of the control unit is coupled to a processor bus and each of said encryption and authentication processing units comprises a data input bus to the processor bus and means for reading and writing data on the processor bus.

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cont → 4. (Amended) A packet processor as recited in claim 1, wherein said second data bus comprises a daisy-chain connection between the encryption and authentication processing units.

5. (Amended) A method of processing data packets comprising:
coupling a control unit to a first data bus;
receiving first and second data packets in the control unit from the first data bus;
providing a plurality of processing units in data communication with the control unit over a second data bus, independent of the first data bus, said processing units including at least one encryption processing unit and at least one authentication processing unit;
providing data of the first data packet from the control unit to one of the processing units, over the second data bus;
processing said data from the first data packet with said one of the processing units to provide output data for the first data packet from said one of the processing units;
communicating said output data for the first data packet from said one of the processing units to another of the processing units for further processing; and
providing data from the second data packet to said one of the processing units, while said other processing unit further processes the output data for the first data packet.

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6. (Amended) A method as recited in claim 5, wherein said one of the processing units comprises an encryption processing unit and said other of said processing units comprises an authentication processing unit.

7. (Amended) A method as recited in claim 5, wherein said at least one authentication processing unit comprises a first and second authentication processing units.

9. (Amended) A method of processing data in a computer, the method comprising the steps of:
performing encryption on a first data packet within an encryption processing unit; and
after completion of the encryption of the first data packet,
performing authentication of the first data packet within at least one authentication processing unit connected to the encryption processing unit by a data bus, and
performing encryption of a second data packet within the encryption processing unit prior to completion of authentication of the first data packet.

15. (Amended) A method of processing data in a computer, the method comprising the steps of:
encrypting a first data packet with an encryption processing module;
authenticating the encrypted first data packet with a first authentication processing module;
encrypting a second data packet with the encryption processing module while authenticating the first data packet with the first authentication processing module connected to the encryption processing module by a data bus; and
authenticating the second data packet with the first authentication processing module.

16. (Amended) An apparatus for processing data, comprising:
a computer having a data storage device connected thereto, wherein the data storage device stores a data;

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one or more computer programs, performed by the computer, for performing encryption on a first data packet within an encryption processing unit, and, after completion of the encryption of the first data packet, performing authentication of the first data packet in at least one authentication processing unit connected to the encryption processing unit by a data bus, and performing encryption of a second data packet within the encryption processing unit prior to completion of authentication of the first data packet.

22. (Amended) An apparatus for processing data, comprising:
a computer having a data storage device connected thereto, wherein the data storage device stores a data;

one or more computer programs, performed by the computer, for encrypting a first data packet with an encryption processing module, authenticating the encrypted first data packet with a first authentication processing module connected to the encryption processing module by a data bus, encrypting a second data packet with the encryption processing module while authenticating the first data packet with the first authentication processing module, and authenticating the second data packet with the first authentication processing module.

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23. (Amended) An article of manufacture comprising a computer program carrier readable by a computer and embodying one or more instructions executable by the computer to perform method steps for processing data, the method comprising the steps of:

performing encryption on a first data packet with an encryption processing unit; and
after completion of the encryption of the first data packet,
performing authentication of the first data packet in at least one authentication processing unit connected to the encryption processing unit by a data bus, and
performing encryption of a second data packet within the encryption processing unit prior to completion of authentication of the first data packet.

29. (Amended) An article of manufacture comprising a computer program carrier readable by a computer and embodying one or more instructions executable by the computer to perform method steps for processing data, the method comprising the steps of:

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encrypting a first data packet with an encryption processing module;
authenticating the encrypted first data packet with a first authentication processing module connected to the encryption processing unit by a data bus;
encrypting a second data packet with the encryption processing module while authenticating the first data packet with the first authentication processing module; and
authenticating the second data packet with the first authentication processing module.

30. (Amended) A method of processing data packets comprising:
coupling a control unit to a first data bus;
receiving a first data packet in the control unit from the first data bus;
providing a plurality of processing units in data communication with the control unit over a second data bus, independent of the first data bus, said processing units including at least one encryption processing unit and at least one authentication processing unit;
providing data of the first data packet from the control unit to multiple processing units, over the second data bus;
processing said data from the first data packet with said multiple processing units in parallel.

31. (Amended) A method as recited in claim 30, wherein said plurality of processing units comprises at least one encryption processing unit and a plurality of authentication processing units.
